

**IN THE CLAIMS:**

Please amend claims 1-20 as follows:

**LISTING OF CURRENT CLAIMS**

1. (Currently Amended) A fluoropolymer ~~composite~~ blend with high ionic conductivity, applicable in the electroactive polymer composite, comprised by following components:

PVDF-g-SPS (styrene-grafted and sulfonated PVDF);

PVDF (polyvinylidene fluoride); and

Hydrocarbon-elastomer.

2. (Currently Amended) The fluoropolymer ~~composite~~ blend with high ionic conductivity according to claim 1, wherein ~~the manufacturing method for the PVDF-g-SPS is that the polystyrene styrene is grafted~~ made by grafting styrene onto the ~~main chain of the macromolecular of the polyvinylidene fluoride resin that is then ionized by sulfonyl group to become ionomer~~ followed by sulfonation.

3. (Currently Amended) The fluoropolymer ~~composite~~ blend with high ionic conductivity according to claim 1, wherein the fluoropolymer ~~composite~~ blend with high ionic conductivity ~~may be~~ is cross-linked by ~~any one of the two cross-linkers, that is, the compounds belonged to diamine or peroxide,~~ organic diamine or organic peroxide, and ~~the~~ an amount of the cross-linker is ~~around~~ between 0.5~5% of the entire weight of the ~~composite~~ blend, and the temperature of the cross-link is between 25°C to 200°C, and the pressure range is 0~500psi.

4. (Currently Amended) The fluoropolymer ~~composite~~ blend with high ionic conductivity according to claim 1, wherein ~~the~~ a number average molecular weight of the PVDF is between 80,000 and 350,000.

5. (Currently Amended) The fluoropolymer composite blend with high ionic conductivity according to claim 2, wherein ~~the~~ a degree of grafting rate for the styrene monomer onto the PVDF is between 10% to 100mole %, wherein the degree of grafting =  $[m_1 - m_0] \times 100\%$ , where  $m_0$  is the mass of PVDF and  $m_1$  is the mass of grafted PVDF.

6. (Currently Amended) The fluoropolymer composite blend with high ionic conductivity according to claim 1, wherein the hydrocarbon-elastomer ~~may be~~ is poly ethyl acrylate, ~~and its~~ having a number average molecular weight is between 100,000 to 300,000.

7. (Currently Amended) The fluoropolymer composite blend with high ionic conductivity according to claim 2, wherein ~~the~~ a degree of sulfonation ~~sulphonating rate~~ of the PVDF-g-SPS is between 30% and 100%.

8. (Currently Amended) The fluoropolymer composite blend with high ionic conductivity according to claim 7, wherein the degree of sulfonation ~~the sulphonating rate~~ of the PVDF-g-SPS is between 60% and 100%.

9. (Currently Amended) The fluoropolymer composite blend with high ionic conductivity according to claim 1, wherein ~~the~~ a weight proportion portion of the PVDF-g-SPS is between 10% to 60%, ~~the~~ a weight proportion portion of the PVDF is between 15% to 50%, and ~~the~~ a weight proportion portion of the hydrocarbon-elastomer is between 10% to 60%.

10. (Currently Amended) The fluoropolymer composite blend with high ionic conductivity according to claim 1, wherein the hydrocarbon-elastomer ~~may be~~ is an acrylic-elastomer, ~~such as: poly ethyl acrylate or the derivatives of other alkyl,~~ and ~~the adding amount proportion is~~ having a weight portion between 10% and 60% of ~~the~~ a weight of the total composite blend.

11. (Currently Amended) A fluoropolymer composite blend with high ionic conductivity, which is applicable in the electroactive polymer composite and is comprised by following three components:

PVDF-g-SPS (styrene-grafted and sulfonated PVDF);

PVDF (polyvinylidene fluoride); and

Fluoro-elastomer.

12. (Currently Amended) The fluoropolymer composite blend with high ionic conductivity according to claim 11, wherein the ~~manufacturing method for the~~ PVDF-g-SPS is ~~that the polystyrene-styrene is grafted~~ made by grafting styrene onto ~~the main chain of the macromolecular of the~~ a polyvinylidene fluoride resin that is ~~then ionized by sulfonyl group to become ionomer~~ followed by sulfonation.

13. (Currently Amended) The fluoropolymer composite blend with high ionic conductivity according to claim 11, wherein the fluoropolymer composite blend with high ionic conductivity ~~may be~~ is cross-linked by ~~any one of the two cross-linkers, that is, the compounds belonged to~~ organic diamine or organic peroxide, and ~~the an~~ amount of the cross-linker is around between 0.5~5% of the entire weight of the ~~composite, and blend~~, the temperature of the cross-link is between 25°C to 200°C, and the pressure range is 0~500psi.

14. (Currently Amended) The fluoropolymer composite blend with high ionic conductivity according to claim 11, wherein ~~the~~ a number average molecular weight of the PVDF is between 80,000 and 350,000.

15. (Currently Amended) The fluoropolymer composite blend with high ionic conductivity according to claim 12, wherein ~~the~~ a degree of grafting rate for the styrene monomer onto the PVDF is between 10% and 100mole %, wherein the degree of grafting =  $[m_1 - m_0] \times 100\%$ , where  $m_0$  is the mass of PVDF and  $m_1$  is the mass of grafted PVDF.

16. (Currently Amended) The fluoropolymer ~~composite~~ blend with high ionic conductivity according to claim 12, wherein ~~the sulphonating rate~~ a degree of sulfonation of the PVDF-g-SPS is between 30% and 100%.

17. (Currently Amended) The fluoropolymer ~~composite~~ blend with high ionic conductivity according to claim 16, wherein the ~~sulphonating rate~~ degree of sulfonation of the PVDF-g-SPS is between 60% and 100%.

18. (Currently Amended) The fluoropolymer ~~composite~~ blend with high ionic conductivity according to claim 11, wherein ~~the~~ a weight proportion portion of the PVDF-g-SPS is between 10% to 60%, ~~the~~ a weight proportion portion of the PVDF is between 15% to 50%, and ~~the~~ a weight proportion portion of the hydrocarbon-elastomer is between 10% to 60%.

19. (Currently Amended) The fluoropolymer ~~composite~~ blend with high ionic conductivity according to claim 11, wherein ~~the~~ a number average molecular weight of the fluoro-elastomer is between 80,000 and 2,800,000.

20. (Currently Amended) The fluoropolymer ~~composite~~ blend with high ionic conductivity according to claim 11, wherein the fluoro-elastomer ~~may be Viton or is~~ a polymer of vinylidene fluoride /hexafluoropropylene/tetrafluoroethylene, and the proportion of its adding weight is having a weight portion between 10% and 60% of ~~the~~ a weight of total composite blend.